

What: Stabilized Fertilizer (N) Working Group

Why: Receiving questions and seeing some “Slowly Available N” claims, slow release and/or controlled release claim(s), and/or products meeting state enhanced efficiency and/or fertilizer restriction criteria

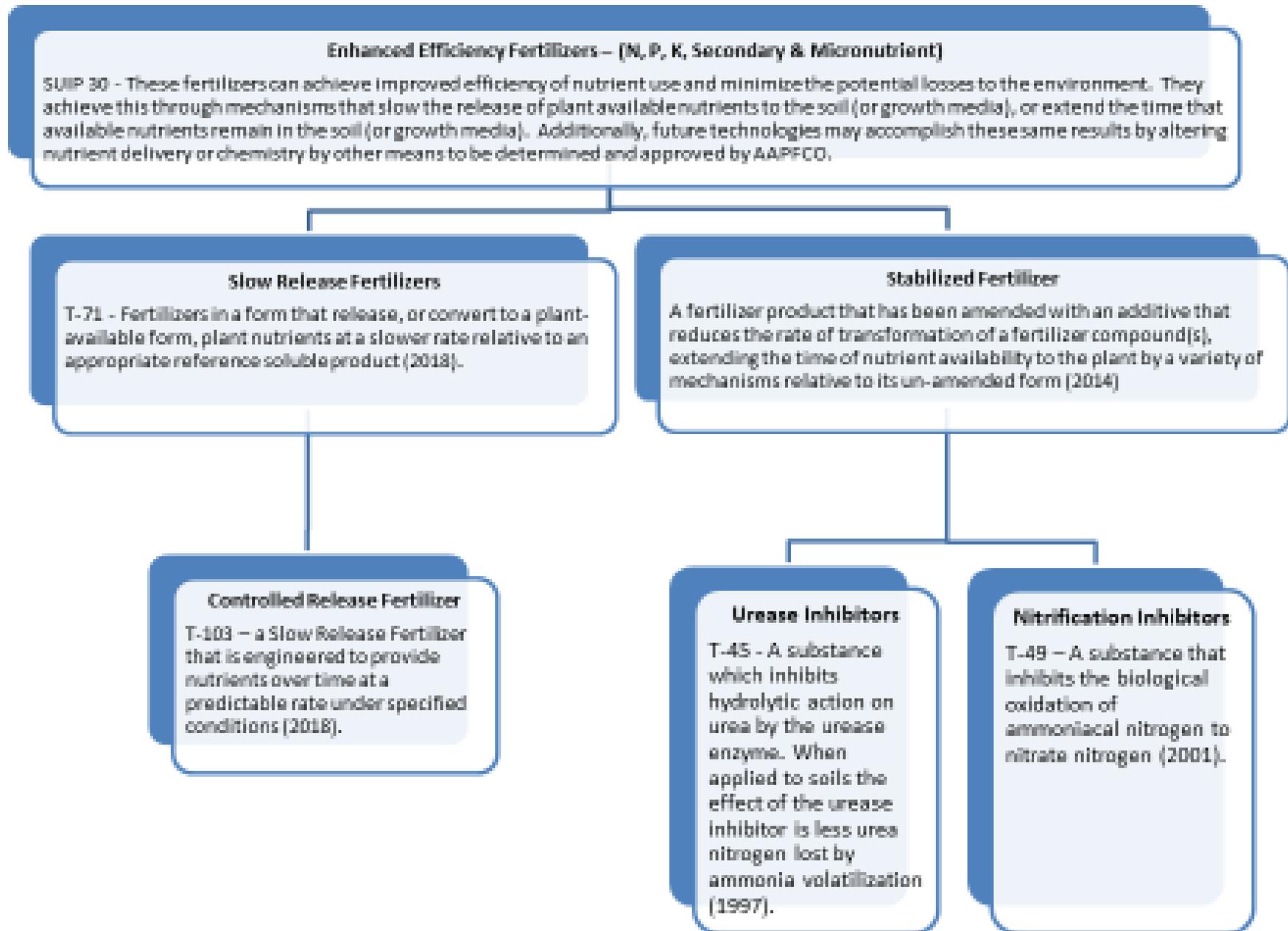
Who: James Bartos (IN), Brian Birrenkott (Scotts); Alan Blaylock (Nutrien); Brian Bret (Corteva); Martin Burger (CA), Bill Easterwood (Yara); Bill Hall (NPK Consultants); Michael Hojattie (TKI); Eric Milner (Koch); Toby Primbs (OR); Jim Skillen (LHPWG); Ed Thomas (TFI)

When: One conference call and several email exchanges so far.

Some initial suggestions:

- 1. Develop a flow chart for quick and greater differentiation between products***
- 2. Reach out to all the main stabilizer companies for inclusion in this discussion***
- 3. What is in the AAPFCO labeling guide with respect to stabilized fertilizers? Do we need an example?***
- 4. What is in the AAPFCO “Slow Release and Stabilized Fertilizers” policy statement on this and is it complete and clear?***
- 5. Should any supplemental requirements (EPA registration/restrictions) be mentioned?***
- 6. Clarifications regarding stabilizers may open up the need for greater clarity on SR/CR/EE?***

Enhanced Efficiency Fertilizers - Hierarchy of Key Terms and Definitions



1. Maryland and other states have enhanced efficiency fertilizer requirements (e.g. https://mda.maryland.gov/resource_conservation/Documents/fertilizerwebpage.pdf), would stabilized fertilizers meet these requirements?

I recommend that we consult with Phil Davidson. My opinion is a registrant would be required to provide data to demonstrate the application does not release >0.7 lb N/M/month. Stabilized N is released immediately, it is just not available due to the action on soil organisms and the “release” part of MD requirements would disqualify it from the MD EEF requirements.

I think this may be subject to interpretation. *The requirement specifies not more than 0.7 lbs of N/1000 sq ft except when using an EEF*. Since stabilized fertilizers are defined as EEFs, they could be seen as exempt from this limit even though they are water soluble, and some stabilized fertilizers may not provide the water quality protection intended by the restrictions. The Maryland rule is ambiguous in whether it means all EEFs or just water insoluble or slow release EEFs. Herein lies a complication of the Maryland restrictions rather than the AAPFCO definitions. The intent of the Maryland rule is water quality protection and only some stabilizers (nitrification inhibitors) provide this protection while others (urease inhibitors) do not provide water quality benefits. Use of the term “enhanced efficiency fertilizer” in a water-quality protection rule is too broad for the intent of the rule. ... there are other ambiguities therein. For example, there seems to be a contradiction between the 0.7 lbs N/1000 sq ft limit and the 2.5 lbs N/1000 rate for EEFs. Is the whole fertilizer considered an EEF is only part of the N is supplied by an EEF form?

2. Is it appropriate for a stabilized fertilizer to make a “Slowly Available Nitrogen” claim?

Slowly available more accurately describes the mode of action than slow release, however “slowly available N” has historically been interpreted by regulators to imply slow release. As such I think it would be in conflict with Rule 3

The language of the slow release definition and in policy statement 1.a (“converting to a plant-available form”) seems to allow some stabilizers to make “slowly available nitrogen” claims. Perhaps a deficiency in the definition? Some stabilizers, the urease inhibitors, could be said to delay plant availability by slowing the conversion from urea to ammonium. However, 1.b specifies that nitrification inhibitors, urease inhibitors, and nitrogen stabilizers are stabilizing amendments using the words “additives” and “amendments”, which as I read it, is different from the slow-release

mechanisms described in 1.a. I think this difference should disqualify stabilized fertilizers from “slowly available nitrogen” claims. As I recall from the conference call, there was unanimity on the point that the intent of the definitions and SUIP is to distinguish between the two classes of fertilizers, one qualifying for slowly available claims (those described in 1.a) and the other not qualifying for slowly available claims (those described in 1.b). If this policy statement is not sufficiently clear, then perhaps some modification of it and/or the slow-release definition is in order. Perhaps simply adding to the stabilizer definition something like “...are not a source of slowly available nutrients...” would clarify the matter.

Although urease inhibitors slow down the availability of ammonium to plants, the main purpose of urease inhibitors is to prevent ammonia volatilization whereas other stabilizers, such as nitrification inhibitors, clearly do not slow down the availability of N to plants. So, should we include a definition that is maybe true for some stabilizers, but not for others? The argument to not include “slowly available nitrogen” in the stabilizer definition seems clear. However, unfortunately dicyandiamide itself is a source of slowly available nitrogen (albeit the amount of N supplied in a typical application is very small).

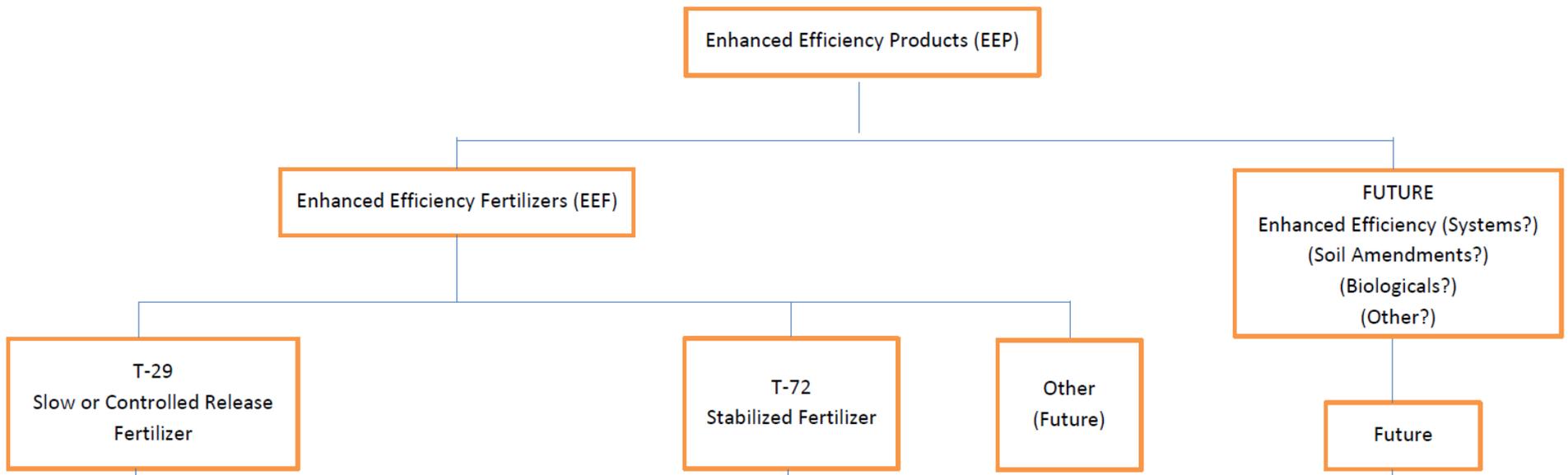
3. With regard to Rule 3 (15% Rule) or other similar state rule, would a fertilizer product that contained 15% (or applicable) of its total guarantee with a stabilized nutrient meet Rule 3’s criteria?

No, due to “released slowly”

Given the descriptions in the policy statement 1.a and 1.b, it would seem that the rule above does not apply to stabilizers. We discussed this in regard to the investigations being done by the science advisory panel and limited their scope to slow release materials. This is something that should be addressed, however. What minimum “guaranteed” content of stabilized fertilizer should be imposed to make stabilized claims? Should there not be a similar rule for stabilized fertilizers? What protects the consumer from a product containing an ineffective amount of a stabilizer while still making the stabilized claim?

Additional Comments:

... possibly having a new umbrella term of Enhanced Efficiency Products, of which Enhanced Efficiency Fertilizers would be a subset. This might be a way to plan for fertilizer additives, such as stabilizers or some unknown material that is not a fertilizing material but can demonstrate it aids in nutrient use efficiency.



... a possible starting point for rewriting the SUIP, policy statements, etc. could begin with the work we did on the entire EEF/SR/CR “package” when we began this exercise. This could be an option as a starting point for the discussion and updating these with the new concerns...

... we may have allowed “slowly available nitrogen” for some stabilized N fertilizer, but by definition this does not seem appropriate.